

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellants: <b>Richards, Dan et al.</b>	§	Confirmation No.: <b>1876</b>
	§	
Application No.: <b>10/522,627</b>	§	Art Unit: <b>1792</b>
	§	
Filing Date: <b>January 31, 2005</b>	§	Examiner: <b>Golightly, Eric Wayne</b>
	§	
Title: <b>Apparatus and Method for</b>	§	Attorney Docket No.: <b>CEDA001</b>
<b>Cleaning a Coker or other Vessel</b>	§	

Commissioner for Patents  
P.O. Box 1450  
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**APPEAL BRIEF; 37 C.F.R. §41.37**

This brief is in furtherance of the Notice of Appeal filed in this application on June 25, 2009. The brief is accompanied by the requisite fee, a petition for a two month Extension of Time pursuant to 37 C.F.R. §41.37(e), and associated extension fees.

### **REAL PARTY-IN-INTEREST**

The real party-in-interest is CEDA International Corporation of Calgary, Alberta, Canada, the assignee of record, as recorded at reel 016833, frame 0908.

### **RELATED APPEALS AND INTERFERENCES**

With respect to other prior and pending appeals, interferences or judicial proceedings related to, that will directly affect, or be directly affected by, or have a bearing on the Board's decision in the pending appeal, there are no such appeals, interferences or judicial proceedings.

## **STATUS OF CLAIMS**

### **A. Status of All Claims in the Proceeding**

Claims rejected: 43-67 and 69-72.

Claims allowed or confirmed: None.

Claims withdrawn: 68.

Claims objected to: 62 and 68.

Claims canceled: 1-42.

### **B. Identification of Claims being Appealed**

The claims on appeal are 43-67 and 69-72.

### **STATUS OF AMENDMENTS**

An after final amendment document was filed 06/25/09 addressing objections to claims 62 and 68 and complying with all requirements as to form set forth in the previous Office Action. The amendments were refused entry as indicated in the Advisory Action of 07/14/09 (claim 68 was also withdrawn from consideration by the examiner in the Advisory Action).

## **SUMMARY OF CLAIMED SUBJECT MATTER**

### **Technical Background**

A coker is a type of vessel used in the extraction of crude oil from solid materials (e.g. sand). Exxon Corporation for example manufactures a dense phase cyclone reactor coker. Such cokers typically have a plurality of “snouts” 600, 602 (see figures 75-77 of Appellants’ application) disposed circumferentially around the inside of an upper region of the coker. Each snout 602 may include an elbow joint for example, and is typically in communication with a respective gas tube 604 extending vertically downward within the coker. Below the gas tube 604 is a void area for the cyclone effect, and dip leg vicinity 608 extending beneath the void area. Cokers are typically designed to operate continuously, 24 hours a day, 365 days per year, typically outputting in the range of 75,000 or more barrels of crude oil per day. These vessels require cleaning of coke deposits which build up over time. Such coke deposits are typically as hard as concrete, and the clean-up process could take 30 days or more, resulting in tens of millions of dollars in clean-up costs and lost revenue. The claims are directed toward apparatus for cleaning such vessels.

## Summary of Each Independent Claim

Claim 43 recites an apparatus 100 for cleaning a vessel 102. **{For substantially the entire claim concisely see, e.g., specification page 8, line 28 to page 9, line 24; and Figs. 1-3}**. The apparatus 100 has an elongated rigid conduit 106 **{see e.g. rigid shroud 116}** insertable into the vessel 102 such that the rigid conduit 106 extends therein. The apparatus 100 also has an elongated flexible conduit 104 **{see e.g. coiled tubing 108}** insertable through the rigid conduit 106 into the vessel 102, for conducting pressurized liquid into the vessel 102 to clean the vessel 102. The elongated flexible conduit 104 is sufficiently long to extend beyond an innermost end of the rigid conduit 106 when the elongated flexible conduit 104 is inserted into the vessel 102. **{See, e.g., specification page 3, lines 9-14 and page 17, lines 17-20.}**

Claim 44 recites an apparatus 100 for cleaning a vessel 102. **{For substantially the entire claim concisely see, e.g., specification page 8, line 28 to page 9, line 24; and Figs. 1-3}**. The apparatus 100 has an elongated flexible conduit 104 **{see, e.g., coiled tubing 108}** insertable through a rigid conduit 106 **{see, e.g., rigid shroud 116}** extending into the vessel 102 and having an innermost end terminating therein. The elongated flexible conduit 104 is sufficiently long to extend beyond the innermost end of

the rigid conduit 106 when the elongated flexible conduit 104 is inserted into the vessel 102. **{See, e.g., specification page 3, lines 9-14 and page 17, lines 17-20.}** The elongated flexible conduit 104 conducts pressurized fluid into the vessel 102 to clean the vessel 102.

Claim 70 recites an apparatus 100 for cleaning a vessel 102. ***{For much of the claim concisely see, e.g., specification page 8, line 28 to page 9, line 24; and Figs. 1-3}.*** The apparatus 100 having an elongated rigid conduit 106 **{see, e.g., rigid shroud 116}** insertable into the vessel 102 such that the rigid conduit 106 extends therein; an elongated flexible conduit 104 **{see, e.g., coiled tubing 108}** insertable through the rigid conduit 106 into the vessel 102, for conducting pressurized liquid into the vessel 102 to clean the vessel 102, the elongated flexible conduit 104 sufficiently long to extend beyond an innermost end of the rigid conduit 106 when said flexible conduit 104 is inserted into the vessel 102 **{see, e.g., specification page 3, lines 9-14 and page 17, lines 17-20}**; and a sealing device 130. **{See, e.g., coiled tubing packoff 132, specification page 10, lines 1-12, and Fig. 30.}** The sealing device 130 is for sealing a gap between the flexible conduit 104 and the rigid conduit 106 to prevent fluid from travelling through the gap.

Claim 71 recites an apparatus 100 for cleaning a vessel 102. ***{For much of the claim concisely see, e.g., specification page 8, line 28 to***



**page 9, line 24; and Figs. 1-3}**. The apparatus 100 having an elongated rigid conduit 106 **{see, e.g., rigid shroud 116}** insertable into the vessel 102 such that the rigid conduit 106 extends therein, wherein the rigid conduit 106 is insertable through an elongated rigid valve assembly 122 **{see, e.g., rigid pipe 126 and existing valve 124, specification page 9, lines 26-31}** extending through a wall 120 of the vessel 102; a sealing device 134 **{see, e.g., shroud pack-off 136, specification page 10, lines 14-20; and Fig. 72}** for sealing a gap between the rigid conduit 106 and the valve assembly 122 to prevent fluid from travelling through the gap; and an elongated flexible conduit 104 **{see, e.g., coiled tubing 108}** insertable through the rigid conduit 106 into the vessel 102, for conducting pressurized liquid into the vessel 102 to clean the vessel 102, the elongated flexible conduit 104 sufficiently long to extend beyond an innermost end of the rigid conduit 106 when the flexible conduit 104 is inserted into the vessel 102. **{See, e.g., specification page 3, lines 9-14 and page 17, lines 17-20.}**

Claim 72 recites an apparatus 100 for cleaning a vessel 102. ***{For much of the claim concisely see, e.g., specification page 8, line 28 to page 9, line 24; and Figs. 1-3}***. The apparatus 100 having an elongated rigid conduit 106 **{see e.g. rigid shroud 116}** insertable into the vessel 102 such that the rigid conduit 106 extends therein, wherein the rigid conduit 106 is

insertable through an elongated rigid valve assembly 122 **{see, e.g., rigid pipe 126 and existing valve 124, specification page 9, lines 26-31}** extending through a wall 120 of the vessel 102; a sealing device 134 **{see e.g. shroud pack-off 136, specification page 10, lines 14-20, and Fig. 72}** for sealing a gap between the rigid conduit 106 and the valve assembly 122 to prevent fluid from travelling through the gap; an elongated flexible conduit 104 **{see e.g. coiled tubing 108}** insertable through the rigid conduit 106 into the vessel 102, for conducting pressurized liquid into the vessel 102 to clean the vessel 102, the elongated flexible conduit 104 sufficiently long to extend beyond an innermost end of the rigid conduit 106 when the flexible conduit 104 is inserted into the vessel 102 **{see, e.g., specification page 3, lines 9-14 and page 17, lines 17-20}**; and a further sealing device 130. **{See, e.g., coiled tubing packoff 132, specification page 10, lines 1-12, and Fig. 30.}** The further sealing device 130 is for sealing a gap between the flexible conduit 104 and the rigid conduit 106 to prevent fluid from travelling through the gap.

### **Summary of Each Means Plus Function and Step Plus Function Claim**

Not applicable

## **GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

### **Ground 1**

Claims 43-47, 50-52 and 70 stand rejected under 35 U.S.C. §102(a) and (e) as being anticipated by Lumbroso, et al., US Patent No. 4,828,651 (referred to as “Lumbroso” below).

### **Ground 2**

Claims 53-57 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lumbroso.

### **Ground 3**

Claims 48, 49, 58-62, 69, 71 and 72 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lumbroso in view of Clapp, et al., US Patent No. 4,799,554 (referred to as “Clapp” below).

### **Ground 4**

Claims 64-67 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lumbroso in view of Slator, US Patent No. 3,285,485 (referred to as “Slator” below).

### **Ground 5**

Claims 63 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Lumbroso in view of Clapp, and further in view of Harvestine, US Patent No. 6,206,317 (referred to as “Harvestine” below).

### **Ground 6**

Claim 61 stands rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter regarded as the invention.

## **ARGUMENT**

### **1. Ground of Rejection 1: Errors in §102(a) & (e) Rejection Based on Lumbroso**

#### **1.a. Claims 43, 44, 46, 47 & 50-52**

In the rejection it is believed that §102(b) is the more proper ground of rejection as intended by the examiner. The arguments are treated as such. A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. MPEP 2131.

On page 4, lines 7-9 of the final rejection, the examiner found that Lumbroso's "...elongated flexible conduit,... is fully cable of being inserted through the rigid conduit... and extending beyond an innermost end of the rigid conduit..." The examiner's finding is not supported by the evidence because the Lumbroso mass 12 {col. 3, lines 50-60; and Figs. 1 & 2A} is simply a weight or mass under the influence of gravity. The mass 12 simply rests against the turbine 11. The Lumbroso flexible tube 10 is not insertable through the mass 12 into the vessel, the flexible tube 10 sufficiently long to extend beyond an innermost end of the mass 12 when the flexible tube 10 is inserted into the vessel, as required by Appellants' claims 43 and 44.

The examiner appears to have ignored the claim language as a whole including the functional language. Patent applicants are their own lexicographers and they can define in the claims what they regard as their invention essentially in whatever terms they choose so long as any special meaning assigned to a term is clearly set forth in the specification. See MPEP 2173.01. As discussed at MPEP 2173.05(g) "Functional Limitations":

A functional limitation is an attempt to define something by

what it does, rather than by what it is (e.g., as evidenced by its specific structure or specific ingredients). There is nothing inherently wrong with defining some part of an invention in functional terms. Functional language does not, in and of itself, render a claim improper. *In re Swinehart*, 439 F.2d 210, 169 USPQ 226 (CCPA 1971).

A functional limitation must be evaluated and considered, just like any other limitation of the claim, for what it fairly conveys to a person of ordinary skill in the pertinent art in the context in which it is used. A functional limitation is often used in association with an element, ingredient, or step of a process to define a particular capability or purpose that is served by the recited element, ingredient or step. In *Innova/Pure Water Inc. v. Safari Water Filtration Sys. Inc.*, 381 F.3d 1111, 1117-20, 72 USPQ2d 1001, 1006-08 (Fed. Cir. 2004), the court noted that the claim term "operatively connected" is "a general descriptive claim term frequently used in patent drafting to reflect a functional relationship between claimed components," that is, the term "means the claimed components must be connected in a way to perform a designated function." "In the absence of modifiers, general descriptive terms are typically construed as having their full meaning." *Id.* at 1118, 72 USPQ2d at 1006. In the patent claim at issue, "subject to any clear and unmistakable disavowal of claim scope, the term 'operatively connected' takes the full breath of its ordinary meaning, i.e., 'said tube [is] operatively connected to said cap' when the tube and cap are arranged in a manner capable of performing the function of filtering." *Id.* at 1120, 72 USPQ2d at

1008...

In a claim that was directed to a kit of component parts capable of being assembled, the Court held that limitations such as "members adapted to be positioned" and "portions . . . being resiliently dilatable whereby said housing may be slidably positioned" serve to precisely define present structural attributes of interrelated component parts of the claimed assembly. *In re Venezia*, 530 F.2d 956, 189 USPQ 149 (CCPA 1976).

See also more recently *Microprocessor Enhancement Corp.*, 520 F.3d 1367 (Fed. Cir. 2008) upholding mixed subject matter claims when the limitations can be ascertained.

The functional limitations in Appellants' claims 43 and 44 cannot be ignored.

Next, on page 4, lines 4-6 of the final rejection, the examiner found that Lumbroso's "...mass (Fig. 1, ref. 12 and col. 3, line 58), or elongated rigid conduit, that is fully capable of... extending therein..." The examiner's finding is not supported by the evidence because the Lumbroso mass 12 is not insertable into the vessel such that the mass extends therein. To "extend" as recited in the claim would imply within the context of Lumbroso that the mass 12 is continuous, spread out in space and has a start point (outside of or at the vessel wall) and an endpoint (inside the vessel). This simply is not the case with Lumbroso's mass 12.

To further assist in explaining the foregoing point it is noted that from the record the Appellants' claimed apparatus requires the use of both a rigid conduit and a flexible conduit for insertion through the rigid conduit; the rigid conduit is insertable into the vessel such that the rigid conduit extends therein, at least in part, to support the flexible conduit so that the flexible conduit may be extended into the vessel a sufficient distance to permit

cleaning of the desired components therein, such as the cyclone snouts, by the flexible conduit; pressurized liquid is then conducted through the flexible conduit into the vessel to perform the cleaning operation. **{See Appellants' specification at page 14, lines 24-29.}** Lumbroso describes the removal of coke from a coking reactor 2 by lowering a flexible tube 10 into the reactor, wherein the lowermost end of the flexible tube 10 includes a water ejection device or turbine 11; pressurized water is directed through the flexible tube 10 for ejection from the turbine 11 in order to clean the reactor; as shown in Figure 1 of Lumbroso et al., the flexible tube 10 is wound about a storage drum 5 and lowered into the reactor 2 by one or more guide pulleys 13; in operation, the upper and lower ends of the reactor 2 are opened and the turbine 11 is lowered, via a guide pulley 13, *by simply unwinding the flexible tube 10* from the storage drum 5. Thus, *the flexible tube 10 of Lumbroso is simply lowered through an open upper end of the reactor 2*. Further, the turbine 11 is lowered into the reactor 2 *by the operation of gravity* given the described weight of the turbine 11. If the turbine 11 is insufficiently heavy, a relatively heavy additional mass 12 (shown attached to the end of the tube 10) enables the weight borne by the tube to be increased. The mass 12 is simply a weight and the flexible tube 10 otherwise dangles in the reactor 2. **{See Lumbroso column 1, lines 47 - 54; column 1, line 65 - column 2, line 8; column 3, lines 50 - 68; and Column 4, lines 8 – 20}.**

Further, on page 4, lines 4-6 of the final rejection, the examiner found that Lumbroso's "...mass (Fig. 1, ref. 12 and col. 3, line 58), or elongated rigid conduit, that is fully capable of... extending therein..." The examiner's finding further is not supported by the evidence because the Lumbroso mass 12 is not a "rigid conduit insertable into the vessel such that the rigid conduit extends therein". Note that at col. 3, lines 50-60 and Fig. 1 of Lumbroso et al.

disclose and teach to one skilled in the art that the conduit to the turbine 11 is the flexible tube 10. The mass 12 is not a conduit. It is added to increase the weight borne by the flexible tube 10. A “conduit” is a channel or means whereby something is passed, whereas the Lumbroso mass 12 simply rides or seats on the turbine 11 as it is raised or lowered in the vessel. This cannot be reconciled with the examiner’s finding because if the mass 12 is not a conduit, then it cannot be the elongated rigid conduit element as recited in Appellants’ claims.

### **1.b. Claims 45 & 70**

Appellants incorporate the above expressed arguments, authorities and parts of the record relied upon with respect to the rejected claim(s).

On page 4, lines 9-10 of the final rejection, the examiner found that “...superimposed layers with watertight sheathings (col. 2, lines 64-66 [Lumbroso]), that read on the sealing device between the conduits.” The examiner’s conclusion is erroneous because Lumbroso is addressing a multilayer flexible hose which can incorporate several watertight plastic sheathings such that the flexible hose can withstand internal pressure, tension and torque. This does not disclose, as appellants claim, a sealing device for sealing a gap between the flexible conduit and the rigid conduit to prevent fluid from travelling through the gap. In other words, within the context of Lumbroso, Lumbroso’s plastic sheathings do not seal a gap between Lumbroso’s flexible tube 10 and mass 12 to prevent fluid from traveling through the gap.

## **2. Ground of Rejection 2: Errors in §103(a) Rejection Based on Lumbroso**



## **2.a. Claim 53**

Appellants incorporate the above expressed arguments, authorities and parts of the record relied upon with respect to the rejected claim. Accordingly Lumbroso cannot teach the claim *as a whole* as it fails to show or suggest all claim limitations and/or Lumbroso does not show or suggest that which the examiner concludes. In determining the differences between the prior art and the claims, the question under 35 USC 103 is not whether the differences themselves would have been obvious, but whether the claimed invention *as a whole* would have been obvious. MPEP 2141.02

## **2.b. Claim 54**

Appellants incorporate the above expressed arguments, authorities and parts of the record relied upon with respect to the rejected claim. Accordingly Lumbroso fails to show or suggest all claim limitations and/or Lumbroso does not show or suggest that which the examiner concludes.

Further, on page 6, lines 16-18 of the final rejection the examiner writes that Lumbroso discloses a flexible conduit “which is sufficiently long to be inserted into the snout of a coker vessel (Fig. 1, ref. 2)...” The examiner’s finding is not supported by the evidence. Lumbroso states “[w]hen the turbine reaches the lower end of the reactor...” **{See Lumbroso col. 4, lines 17-18}**. This is entirely vague and is not mentioned within the context of insertion into a snout. Although the examiner failed to determine the level of ordinary skill in the pertinent art, which is believed to constitute further error (see MPEP 2141 and 2141.03), Lumbroso does not imply the functional limitation of a flexible conduit sufficiently long for insertion into a snout of a coker vessel.

## **2.c. Claims 55-57**

Appellants incorporate the above section 2.b. including its prior

incorporations and its arguments, authorities and parts of the record relied upon with respect to the rejected claims. Further, on page 6, the last line to page 7, line 5 of the final rejection the examiner found that the skilled artisan would have found it obvious to include a flexible conduit of sufficient length in order to locate the nozzle as claimed. The examiner's finding is not supported by the evidence. Although the examiner failed to determine the level of ordinary skill in the pertinent art, which is believed to constitute further error (see MPEP 2141 and 2141.03), Lumbroso does not imply the functional limitation of a flexible conduit sufficiently long for insertion through the snout into a gas tube of the coker vessel (claim 55), through the gas tube into the cyclone region (claim 56), and through the cyclone region into a vicinity of the dip leg of the coker vessel (claim 57). This is so because Lumbroso's flexible tube 10 *drops vertically* into the reactor 2 under the influence of gravity (and mass 12) as it is unwound from drum 5. Accordingly, Lumbroso's flexible tube 10 cannot be sufficiently long to enter the claimed structures because Lumbroso could not even align to enter the gas tube, the cyclone region, and the dip leg of the coker vessel via the snout (at best it could swing or run along pulley 13 to meet or strike only the mouth of a snout, **{see Appellant's Figs. 76 & 77, snout reference number 602, and the specification at page 2, lines 6-14 where prior art problems in accessing the snout are discussed}**}).

### **3. Ground of Rejection 3: Errors in §103(a) Rejection Based on Lumbroso in view of Clapp**

#### **3.a. Claim 48**

Appellants incorporate the above section 1.a. and its arguments,

authorities and parts of the record relied upon with respect to the rejected claim.

Further, on page 7, lines 14-16 of the final rejection the examiner writes that Clapp discloses an elongated rigid valve assembly (Fig. 1, ref. 31 and col. 4, lines 7 and 8) wherein tubing (Fig. 1, ref. 23 and col. 4, line 1), or rigid conduit, is inserted. The examiner's conclusions are erroneous. Initially, Clapp's valve 31 is not disclosed to be elongated. Then, Clapp's tubing 23 is not disclosed to be insertable through an elongated rigid valve assembly as required by Appellants' claim. This is so because Clapp's tubing 23 is *downhole* tubing string 23 and actually appears to be of larger diameter than the flow way of valve 31.

### **3.b. Claims 49 & 71**

Appellants incorporate the above sections 1.a., 1.b. and 3.a. and the related arguments, authorities and parts of the record relied upon with respect to the rejected claims. There is simply no disclosure in Lumbroso or Clapp of a sealing device for sealing a gap between a rigid conduit and a valve assembly as claimed. Furthermore, the examiner failed to determine the level of ordinary skill in the pertinent art, which is believed to constitute further error (see MPEP 2141 and 2141.03).

### **3.c. Claims 69 & 72**

Appellants incorporate the above section 3.b. including its prior incorporations and its arguments, authorities and parts of the record relied upon with respect to the rejected claims. Further, on page 8, lines 1-2 of the final rejection the examiner found that "...Lumbroso and Clapp disclose the second sealing device (Lumbroso at col., 2 lines 64-66)..." The examiner's conclusion is erroneous. The Lumbroso flexible tubes comprised of superimposed layers could not constitute *both* a sealing device (for sealing a

gap between a rigid conduit and a valve assembly) and a second or further sealing device (for sealing a second gap between the flexible conduit and the rigid conduit).

### **3.d. Claims 58-62**

Appellants incorporate the above expressed arguments, authorities and parts of the record relied upon of section 1.a. with respect to the rejected claim(s).

## **4. Ground of Rejection 4: Errors in §103(a) Rejection Based on Lumbroso in view of Slator**

### **4.a. Claim 64**

Appellants incorporate the above section 1.a. and its arguments, authorities and parts of the record relied upon with respect to the rejected claim.

Further, on page 10, lines 15-17 of the final rejection the examiner writes that it would have been obvious to one of ordinary skill in the art to combine Slator with Lumbroso. The examiner's conclusions are erroneous. First, Slator cannot be combined with Lumbroso without destroying Lumbroso's intended function and/or principal of operation. More specifically, if one were to add an insertion device to Lumbroso to insert Lumbroso's flexible tube 10 into mass 12 such would defeat the purpose of Lumbroso's mass 12 which is incorporated to function as a weight seated on the turbine 11. If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. MPEP 2143.02. If the proposed modification or combination of the prior art would change the principle of

operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. MPEP 2143.02. Additionally, the examiner failed to determine the level of ordinary skill in the pertinent art, which is believed to constitute further error (see MPEP 2141 and 2141.03).

#### **4.b. Claims 65-67**

Appellants incorporate the above section 4.a. including its prior incorporations and its arguments, authorities and parts of the record relied upon with respect to the rejected claims. Similar to section 4.a. above, if one were to grip Lumbroso's flexible tube 10 and push the flexible tube 10 through the mass 12 (as per Appellants' claim 65) such would defeat the purpose of Lumbroso's mass 12 which is incorporated to function as a weight seated on the turbine 11. Thus, Slator cannot be combined with Lumbroso without destroying Lumbroso's intended function or principal of operation.

### **5. Ground of Rejection 5: Errors in §103(a) Rejection Based on Lumbroso in view of Clapp and further in view of Harvestine**

#### **5.a. Claim 63**

Appellants incorporate the above expressed arguments, authorities and parts of the record relied upon of section 1.a. with respect to the rejected claim.

### **6. Ground of Rejection 6: Errors in §112 Rejection**

#### **6.a. Claim 61**

On page 3, lines 1-4 of the final rejection, the examiner found that the term "high" is indefinite basing that finding upon "...the specification does not provide

a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonable apprised of the scope of the invention.” The examiner’s finding is not supported by the evidence because Appellants’ specification discloses that in the embodiment described “high pressure” is at least 5,000 psi and more particularly 10,000 psi, for cleaning hardened coke from the snout and other components of the vessel. **{See Appellants’ specification, page 18, lines 13-15}**. Definiteness of claim language must be analyzed, not in a vacuum, but in light of: (A) The content of the particular application disclosure; (B) The teachings of the prior art; and (C) The claim interpretation that would be given by one possessing the ordinary level of skill in the pertinent art at the time the invention was made. MPEP 2173.02. Additionally, the examiner failed to determine the level of ordinary skill in the pertinent art, which is believed to constitute further error (see MPEP 2141 and 2141.03).

## Conclusion

Appellants have pointed out with specificity the errors in the rejections, and the claim language that renders the claims patentable over the reference(s) and combinations thereof. Appellants respectfully request that the rejection of all pending claims be reversed.

Respectfully Submitted,

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## **CLAIMS APPENDIX**

43. An apparatus for cleaning a vessel, the apparatus comprising:
- a) an elongated rigid conduit insertable into the vessel such that the rigid conduit extends therein; and
  - b) an elongated flexible conduit insertable through the rigid conduit into the vessel, for conducting pressurized liquid into the vessel to clean the vessel, said elongated flexible conduit sufficiently long to extend beyond an innermost end of said rigid conduit when said elongated flexible conduit is inserted into said vessel.
44. An apparatus for cleaning a vessel, the apparatus comprising an elongated flexible conduit insertable through a rigid conduit extending into the vessel and having an innermost end terminating therein, said elongated flexible conduit sufficiently long to extend beyond the innermost end of said rigid conduit when said elongated flexible conduit is inserted into said vessel, said elongated flexible conduit conducting pressurized fluid into the vessel to clean the vessel.
45. The apparatus of claims 43 or 44 further comprising a sealing device for sealing a gap between said flexible conduit and the rigid conduit to prevent fluid from travelling through the gap.
46. The apparatus of claims 43 or 44 wherein said rigid conduit comprises a rigid shroud extending into the vessel and having a shape complementary to that of the flexible conduit.
47. The apparatus of claims 43 or 44 wherein said rigid conduit is insertable through an opening defined in a wall of the vessel.

48. The apparatus of claims 43 or 44 wherein said rigid conduit is insertable through an elongated rigid valve assembly extending through a wall of the vessel.
49. The apparatus of claim 48 further comprising a sealing device for sealing a gap between said rigid conduit and the valve assembly to prevent fluid from travelling through the gap.
50. The apparatus of claims 43 or 44 wherein said flexible conduit is capable of conducting the liquid at a pressure of at least 5,000 psi.
51. The apparatus of claims 43 or 44 wherein said flexible conduit is capable of conducting the liquid at a pressure of at least 10,000 psi.
52. The apparatus of claims 43 or 44 wherein said flexible conduit is sufficiently long to be inserted through the rigid conduit into a coker vessel.
53. The apparatus of claim 52 wherein said flexible conduit comprises a nozzle at a tip thereof.
54. The apparatus of claim 53 wherein said flexible conduit is sufficiently long for said nozzle to be inserted into a snout of the coker vessel.
55. The apparatus of claim 54 wherein said flexible conduit is sufficiently long for said nozzle to be inserted through the snout into a gas tube of the coker vessel.
56. The apparatus of claim 55 wherein said flexible conduit is sufficiently long for said nozzle to be inserted through the gas tube into a cyclone region of the coker vessel.
57. The apparatus of claim 56 wherein said flexible conduit is sufficiently long for said nozzle to be inserted through the cyclone region into a vicinity of a dip leg of the coker vessel.



58. The apparatus of claims 43 or 44 wherein said elongated flexible conduit comprises coiled tubing.
59. The apparatus of claim 58 further comprising a reel for storing said coiled tubing in a coil on said reel.
60. The apparatus of claim 59 wherein said reel comprises a liquid junction connectable to an input end of said coiled tubing and connectable to a liquid supplying device for conducting the pressurized liquid from the liquid supplying device into said coiled tubing.
61. The apparatus of claim 60 wherein said liquid junction comprises a high pressure fluid swivel connector.
62. The apparatus of claim 60 further comprising a liquid supplying device, wherein said liquid supplying device comprises a mechanical pump and a hose connectable to said pump and to said liquid junction.
63. The apparatus of claim 59 wherein said reel comprises at least one retaining member for retaining said coiled tubing on said reel.
64. The apparatus of claims 43 or 44 further comprising an insertion device for inserting said flexible conduit through the rigid conduit into the vessel.
65. The apparatus of claim 64 wherein said insertion device comprises an injector assembly operable to grip said flexible conduit and push said flexible conduit through the rigid conduit.
66. The apparatus of claim 65 wherein said injector assembly comprises first and second opposing traction belts operable to snugly grip said flexible conduit therebetween.

67. The apparatus of claim 66 wherein said injector assembly further comprises at least one drive mechanism for rotating said traction belts in opposite respective directions to move said flexible conduit through said injector assembly.
69. The apparatus of claim 49 further comprising a second sealing device for sealing a second gap between said flexible conduit and the rigid conduit to prevent fluid from travelling through the second gap.
70. An apparatus for cleaning a vessel, the apparatus comprising:
- a. an elongated rigid conduit insertable into the vessel such that the rigid conduit extends therein;
  - b. an elongated flexible conduit insertable through the rigid conduit into the vessel, for conducting pressurized liquid into the vessel to clean the vessel, said elongated flexible conduit sufficiently long to extend beyond an innermost end of said rigid conduit when said flexible conduit is inserted into said vessel; and
  - c. a sealing device for sealing a gap between the flexible conduit and the rigid conduit to prevent fluid from travelling through the gap.

71. An apparatus for cleaning a vessel, the apparatus comprising:

- a. an elongated rigid conduit insertable into the vessel such that the rigid conduit extends therein, wherein the rigid conduit is insertable through an elongated rigid valve assembly extending through a wall of the vessel;
- b. a sealing device for sealing a gap between the rigid conduit and the valve assembly to prevent fluid from travelling through the gap; and
- c. an elongated flexible conduit insertable through the rigid conduit into the vessel, for conducting pressurized liquid into the vessel to clean the vessel, said elongated flexible conduit sufficiently long to extend beyond an innermost end of said rigid conduit when said flexible conduit is inserted into said vessel.

72. An apparatus for cleaning a vessel, the apparatus comprising:

- a. an elongated rigid conduit insertable into the vessel such that the rigid conduit extends therein, wherein the rigid conduit is insertable through an elongated rigid valve assembly extending through a wall of the vessel;
- b. a sealing device for sealing a gap between the rigid conduit and the valve assembly to prevent fluid from travelling through the gap;
- c. an elongated flexible conduit insertable through the rigid conduit into the vessel, for conducting pressurized liquid into the vessel to clean the vessel, said elongated flexible conduit sufficiently long to extend beyond an innermost end of said rigid conduit when said flexible conduit is inserted into said vessel; and
- d. a further sealing device for sealing a gap between the flexible conduit and the rigid conduit to prevent fluid from travelling through the gap.

## **EVIDENCE APPENDIX**

none

## **RELATED PROCEEDINGS APPENDIX**

none